

A range extension for *Cryptandra pogonoloba* (Rhamnaceae: Pomaderreae) and recognition of a new subspecies

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Abstract

Additional herbarium specimens of *Cryptandra pogonoloba* A.R. Bean have revealed that the species is more widely distributed in Queensland than described in Bean (2004) and that the indumentum on the leaves can vary considerably. A new subspecies, *C. pogonoloba* subsp. *septentrionalis* Kellermann, is recognised for distinct populations from northern Cape York Peninsula and the description of the typical subspecies is amended.

Introduction

Bean (2004) published new species of *Cryptandra* Sm. from Queensland, among them *Cryptandra pogonoloba* A.R. Bean. He described the species as being unique by having long erect simple hairs at the apex of the calyx lobes, floral bracts with an aristate apex and stipules that are placed on the upper side of the petiole. Further distinctive characters mentioned by Bean include a dense indumentum of stellate trichomes on the adaxial surface of the leaves, a condition relatively rare in *Cryptandra*, the species of which usually have a glabrous, near glabrous or papillose upper surface.

The most distinctive character of the species is the light brown floral bracts; these are broadly ovate and have a very prominent reddish midrib, which extends into an awn that considerably exceeds beyond the lamina (up to 1 mm). The midrib of the stipules is similar. In contrast to Bean (2004), where the stipules are said to be placed on the upper side of the petioles, they are correctly described as overlapping behind the petiole, as well as being fused below the attachment point of the petiole – a feature characteristic for the genus *Cryptandra* (Thiele & West 2004).

For this study, more herbarium specimens of the species than used by Bean (2004) were available from AD, BRI, CANB, MEL and NSW. This has greatly increased our knowledge of the range of the species, which was previously thought to occur only in Bullcring National Park and surrounding areas (Bean 2004). *Cryptandra pogonoloba* extends from north-east of the Gregory Range to the Iron Range on northern Cape York Peninsula. It is one of the northernmost species of the genus. Examination of these specimens also revealed that the indumentum on the upper surface of the leaves of the species varies quite considerably.

While specimens from the type locality in Bullcring National Park have a dense, grey indumentum of stellate hairs, this is not the case for specimens collected from other localities. The indumentum varies from medium to dense and from single, erect hairs to stellate hairs. Some collections have very short, erect hairs or densely papillose surfaces with intermediates between these two forms. Similar variation within one species is also found in *C. tomentosa* Lindl., where there is a gradient from densely

pubescent to glabrous leaves, albeit that species has an indumentum of only simple hairs. Other species with densely pubescent upper leaf surfaces include *C. filiformis* A.R. Bean and *C. intratropica* W. Fitzg., but these species have a consistently dense indumentum.

Populations near Iron Range National Park and Paseoe River are smaller plants and have totally glabrous and smooth leaves, which are generally smaller than those of more southerly populations. They occur at lower altitude and are separated from the southern area of distribution by a gap of over 400 km. This contribution recognises this northern outlier as a distinct subspecies, *Cryptandra pogonoloba* subsp. *septentrionalis* Kellermann and amends the description of the typical subspecies with data from the additional herbarium material. Albeit geographically segregated from the typical subspecies, both taxa share unique diagnostic features that were already identified in the original description of Bean (2004), in particular the conspicuous awned bracts and stipules as well as the erect simple hairs at the apices of the sepals. It seems therefore appropriate to recognise the new taxon at subspecific level.

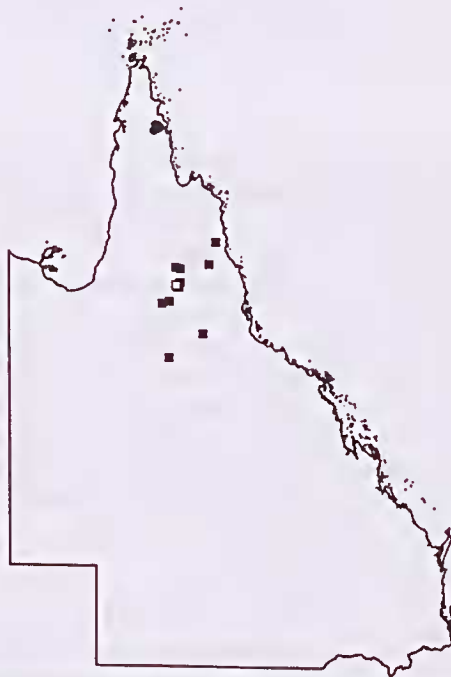


Figure 1. Distribution map of *Cryptandra pogonoloba* subsp. *pogonoloba* (squares) and subsp. *septentrionalis* (circles) in Queensland. A white square indicates the type locality of subsp. *pogonoloba* in Bulleringa National Park.

Taxonomy

Cryptandra pogonoloba A.R. Bean, *Austrobaileya* 6: 930 (2004). *Holotype*: Qld, Cook District, Bulleringa National Park, 80 km north-west of Mt Surprise, Red River area, 23 Apr. 1998, P.I Forster PIF22542 & R. Booth; BRI 605621. *Isotypes*: DNA *n.v.*, K *n.v.*, MEL 2263652, NSW *n.v.*, QRS *n.v.*

Shrubs 0.2–2 m high, not spinescent, with a dense grey or rusty indumentum of stellate and simple hairs on young stems, soon glabrous or persisting on older stems of current season's growth; leaves alternate or in fascicles. *Stipules* persistent, scarious, triangular or ovate, 1.2–2.3 mm long, attenuate or acicular, connate around the base of the petiole, overlapping behind petiole, sparsely to moderately pubescent on midrib and margin, or glabrous. *Petioles* 0.2–0.8 mm long. *Leaf blades* narrowly elliptic or linear with recurved or revolute margins, 2.3–9 mm long, 0.4–1.2 mm wide, entire; base obtuse; apex acute or apiculate with a dark mucro; lower surface usually not visible, densely grey-stellate-hairy, midrib visible or not visible, with sparse to moderate simple hairs; upper surface glabrous and smooth, or papillose or tuberculate, or covered with a moderate to dense indumentum of simple or stellate hairs. *Inflorescence* axillary, appearing terminal at tip of branchlets, consisting of 1–5 flowers in dense heads or clusters. *Bracts* 4–9, persistent, broadly ovate or obovate, 1–2.9 mm long, 1–1.9 mm wide, ciliate, awned, light brown; abaxial side sparsely to moderately pubescent on midrib or glabrous, adaxial side glabrous; cilia 0.3–0.6 mm long; awn protruding up to 1 mm beyond lamina. *Flowers* sessile or subsessile, white or cream. *Hypanthium tube* 0.6–0.8 mm long, 1.7–2.8 mm in diameter, covered with small dense stellate hairs. *Sepals* erect, 1–1.3 mm long, persistent on fruit, with an indumentum of small dense stellate hairs and long erect simple hairs towards apex. *Petals* erect, cucullate, 0.6–0.9 mm long, distinctly clawed, claw c. 0.2 mm long. *Stamen filaments* erect, 0.5–0.7 mm long. *Anthers* 0.3–0.4 mm long. *Disc* a sinuate ring, densely stellate-pubescent. *Ovary* inferior, 3-carpellate; summit densely stellate-hairy. *Style* 0.5–0.9 mm long, entire, glabrous. *Schizocarp* broadly obovoid, 1.8–2.4 mm long, dark brown, splitting into 3 dehiscent fruitlets; apex obtuse, torus in middle third or slightly higher. *Seeds* 1.1–1.4 mm long, reddish brown, ±uniformly coloured; *aril* pale yellow or pale orange, translucent.

Key to subspecies

- 1 Upper leaf surface with papillae or tubercles, or simple or stellate hairs; leaves (1.4–) 3–9 mm long, 0.5–1.2 mm wide, recurved or revolute; lower surface or at least midrib partly visible; flowers solitary or in clusters; between Mt Windsor and the Gregory Range, southern Cape York Peninsula subsp. *pogonoloba*
- 1: Upper leaf surface glabrous, smooth; leaves 2.3–4.5 mm long; 0.4–0.6 mm wide, strongly revolute; lower surface and midrib usually concealed; flowers always solitary; near Paseo River, northern Cape York Peninsula subsp. *septentrionalis*

Cryptandra pogonoloba subsp. *pogonoloba*

Illustration: A.R. Bean, *Austrobaileya* 6: 932 (2004), Fig. 7, photograph.

Shrubs 0.5–2 m high. *Petiole* (0.2–) 0.3–0.9 mm long. *Leaves* narrowly elliptic, (1.4–) 3–9 mm long, 0.5–1.2 mm wide, recurved or revolute; lower surface or at least midrib partly visible, upper leaf surface strongly papillate or tuberculate or covered with a medium to dense indumentum of simple and/or stellate hairs. *Bracts* and *stipules* glabrous or with hairs along the midrib. *Bracts* 1.4–1.9 mm wide. *Flowers* solitary or in clusters of up to 5 flowers especially at branch apices.

Distribution & habitat: The taxon grows in sandy soil on sandstone ridges and slopes in eucalypt woodlands. It occurs from Mt Windsor and Daintree National Park to the Gregory Range (Fig. 1) from 170–1200 m of altitude.

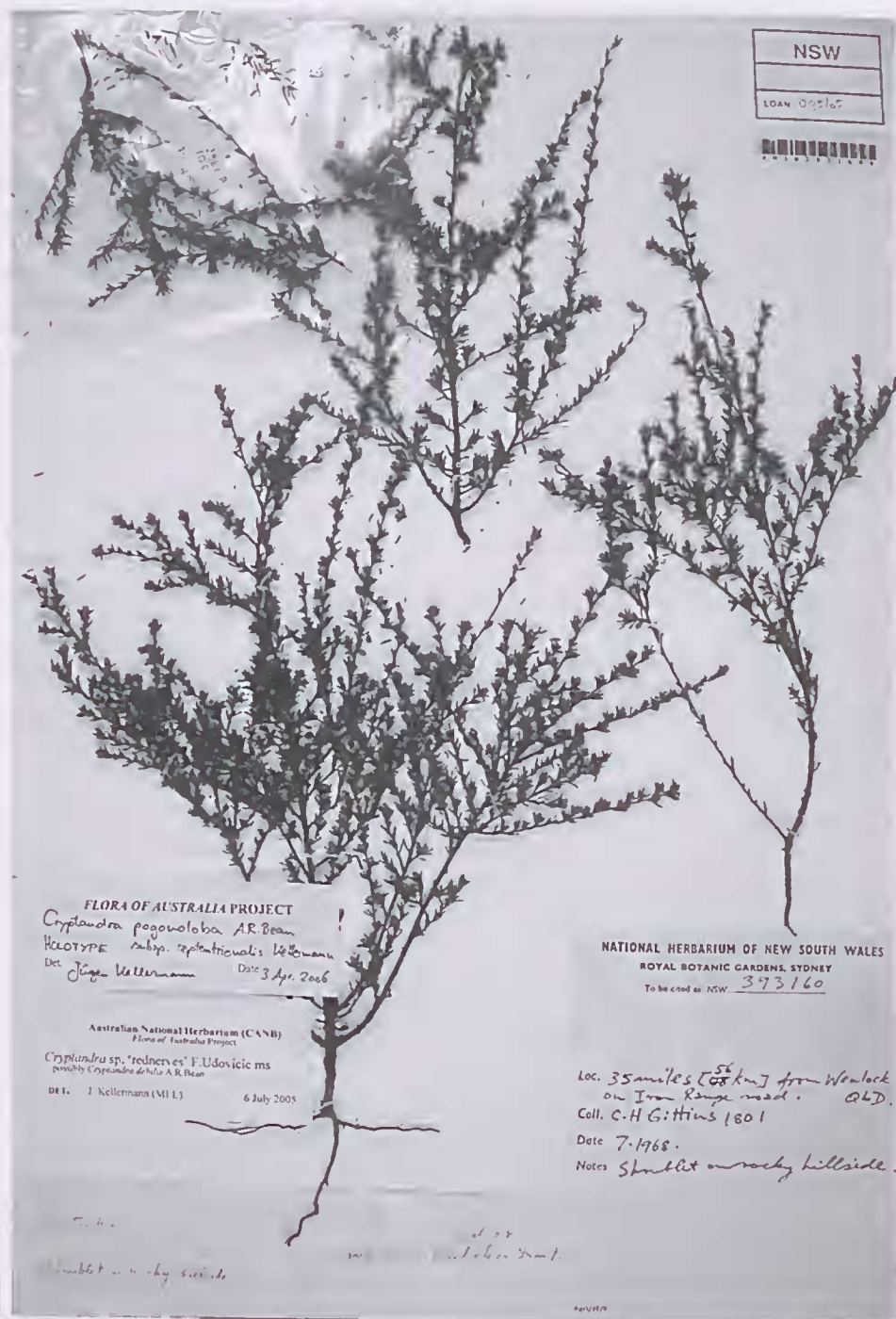


Figure 2. Holotype of *Cryptandra pogonoloba* subsp. *septentrionalis* Kellermann (C.H. Gittins 1801, NSW 393160).

Phenology: Flowers recorded in Jan. and Mar.–July, fruits Apr.–July.

Notes: The lower measurement for petiole and leaf length are due to one specimen from the southern end of distribution, *C. Kahler C530* & *C. Appelman*, which appears to be a small-leaved form. The leaves, however, are densely pubescent. Herbarium sheets seen and annotated by A.R. Bean are indicated with an asterisk in the following listing.

Specimens examined: **Queensland. Burke District.** Gregory Range, 120 km NE of Richmond, 27 km ENE of 'Middle Park' airstrip, 1 Apr. 2004, *C. Kahler G530* & *C. Appelman* (BRI*). **Cook District.** Etheridge River, *s.dat.* [before 1882], *W.E. Armit 658* (MEL); between Etheridge River and Einasleigh River, *s.dat.* [before 1882], *W.E. Armit 658* (MEL); Mt Windsor, Mar. 1941, *T. Carr 103* (BRI); Mt Windsor, 25 Mar. 1941, *T. Carr 166* (BRI); Mt Mulligan, 16 Apr. 1985, *J.R. Clarkson 5865* (BRI); 74 km along Bulimba Station Rd, 27 Jan. 1993, *P.I. Forster PIF13049* & *A.R. Bean* (BRI); Bulleringa National Park, 80 km NW of Mt Surprise, 24 Apr. 1998, *P.I. Forster PIF22608* & *R. Booth* (BRI*); Bulleringa National Park, 80 km NW of Mt Surprise, 25 Apr. 1998, *P.I. Forster PIF22642* & *R. Booth* (BRI*, MEL, DNA *n.v.*); Bulleringa National Park, 80 km NW of Mt Surprise, 26 Apr. 1998, *P.I. Forster PIF22689* & *R. Booth* (BRI*, DNA *n.v.*, MEL, CANB *n.v.*, NSW *n.v.*); 54 km along Bulimba Station road, off Chillagoe to Wrotham Park road, 1 June 1991, *P.I. Forster PIF8438* (BRI*, MEL, AD); Torwood Holding, N of Pinnacle Ck, *s.dat.*, *M.D. Godwin C3844* (BRI*).

Cryptandra pogonoloba subsp. *septentrionalis* Kellermann, subsp. nov.

A subspecies typica habitu minore, foliis brevioribus, lamina lineari et valde revoluta, superficie glabro laevique differt.

Holotype: Qld, Cook District, 35 miles [56 km] from Wenlock on Iron Range Rd, July 1968, *C.H. Gittins 1801*; NSW 393160 (Fig. 2). *Isotypes*: BRI AQ410452, CANB 359070.

Small shrubs 0.2–0.5 m high. *Petiole* 0.2–0.3 mm long. *Leaves* linear, 2.3–4.5 mm long, 0.4–0.6 mm wide, strongly revolute; lower surface and midrib usually concealed, upper leaf surface glabrous, smooth. *Bracts* and *stipules* always glabrous. *Bracts* 1–1.5 mm wide. *Flowers* always solitary.

Distribution & habitat: The subspecies occurs in heath and scrubland or open woodland with heathy understorey on sandy soil over laterite. Collections are only known from areas near Pascoe River, E of Sir William Thompson Range, and Iron Range National Park (Fig. 1). It is recorded from 60–120 m above sea level.

Phenology: Flowers recorded in July; fruits July–Sep.

Etymology: The epithet is derived from the Latin *septentrionalis* (northern) and alludes to the distinctly northern distribution of the subspecies.

Specimens examined: **Queensland. Cook District.** 12 miles E of 'The Lynd', 11 July 1954, *S.T. Blake 19465* (BRI, CANB); Brown's Creek, Pascoe River, 13 Jun. 1948, *L.J. Brass 19169* (BRI, CANB); Brown's Creek, Pascoe River, 13 July 1948, *L.J. Brass 19552* (BRI, CANB); 8.5 km N of Loekhardt River on the track to Wattle Hill, 8 Aug 1991, *J.R. Clarkson 9076* (BRI); 12.1 km NNE of Pascoe R on Iron Range Rd, 13 Sep. 1975, *R. Coveny 7091* & *P. Hind* (NSW); Between Browns Creek and Tozers Gap on Road to Iron Range, 9 July 1988, *M.B. Thomas 292* (BRI, DNA); road to Iron Range from Northern Development road, 27 July 1999, *N.G. Walsh 5759* & *J.P. Walsh* (MEL).

Acknowledgments

I thank the directors of AD, BRI, CANB, and NSW for the loan of specimens. Jo Palmer (CANB) organised the transfer of several loans from Canberra to Melbourne. Neville Walsh read a draft of the paper. Frank Udovicic made available earlier notes and information on *Cryptandra pogonoloba*. This paper is written in preparation of the *Flora of Australia* treatment of Rhamnaceae, supported by the Australian Biological Resources Study (ABRS).

References

- Bean, A.R. (2004). New species of *Cryptandra* Sm. and *Stenanthemum* Reissek (Rhamnaceae) from northern Australia. *Austrobaileya* **6**, 917–940.
- Thiele, K.R. and West, J.G. (2004). *Spyridium burragorang* (Rhamnaceae), a new species from New South Wales, with new combinations for *Spyridium buxifolium* and *Spyridium scortechinii*. *Telopea* **10**, 823–829.